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Life-threatening endobronchial myiasis

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Dear Editor,

A 47-year-old homeless man was admitted to our intensive care unit (ICU) for septic shock as a complication of an infected diabetic foot ulcer. His previous medical history included a type 2 diabetes mellitus treated with metformine and gliclazide. The patient was found comatose and covered with flies in a shelter on the shore of a river. The prehospital emergency care personnel performed bag-valve mask ventilation with 100% oxygen and rapid sequence induction (intravenous etomidate 20 mg and succinylcholine 100 mg), which enabled successful tracheal intubation by a physician upon the first attempt. The patient was then mechanically ventilated and transferred to our ICU. Upon admission, the patient had a Glasgow coma scale score of 3, blood pressure of 82/45 mmHg, body temperature of 33.7 °C, heart rate at 75/min, and arterial oxygen saturation of 90% with an inspired oxygen fraction (FiO₂) of 1. A large necrotic wound on the right foot, in which numerous live larvae were found, was noted. Laboratory tests showed lactic acidosis (pH 6.96, blood lactates >15 mmol/L) and acute renal

failure (blood urea 42 mmol/L, creatinine 465 μmol/L); the hemoglobin level was 8.3 g/dL and the white blood cell count was 16,300/mm³. No abnormalities were found on the chest X-ray. Arterial blood gases obtained after hemodynamic stabilization was achieved (i.e., 1 h after ICU admission) showed normal oxygenation (PaO₂/FiO₂ ratio 523 mmHg at FiO₂ 1). Toxicological screening tests were negative. The conclusion was drawn that the comatose state was due to a profound hemodynamic impairment with severe lactic acidosis. Antibiotic therapy and surgical debridement of the wound were performed. Optic microscopy examination identified the collected larvae as *Lucilia sericata*. Both blood cultures and wound swabs grew methicillin-sensitive *Staphylococcus aureus*. On the second day, larvae were seen leaking from both of his nostrils, and nasal cavity infestation was confirmed by endoscopy (Fig. 1). A cranial computed tomography (CT) scan revealed there was neither brain nor sinus involvement. Management consisted of mechanical removal of the larvae and a single dose of ivermectine. On the third day of mechanical ventilation, a ventilator-generated pressure alarm revealed a sudden increase in peak airway pressures that partially impeded tidal volume delivery to the

patient. Tracheal suctioning was performed immediately and allowed for the extraction of numerous larvae obstructing the endotracheal tube. Flexible bronchoscopy showed the presence of approximately 30 larvae in the left bronchial tree that were then extracted (Fig. 1). Five larvae were removed during another bronchoscopy the following day. Protective measures, including insecticide spray and patient isolation, were implemented to avoid nosocomial transmission. The patient was kept mechanically ventilated in the FiO₂ 0.3 state because of protracted coma. He finally recovered and was successfully extubated on day 8 and discharged from the ICU on day 11.

Myiasis is a parasitic infestation of live human or vertebrate animal tissues or cavities caused by dipterous larvae (maggots). *L. sericata*, known as the green bottle blowfly, is a facultative ectoparasite. In humans, *L. sericata* has been involved in nasal [1], wound [2], gastric, tracheostomy [3], and nosocomial [4, 5] infestations. In this case, predisposing factors for myiasis included a necrotizing wound and a protracted coma with lack of the cough reflex. Whether upper airway manipulations (i.e., bag-valve mask ventilation and laryngoscopy) during endotracheal intubation might have favored the



Fig. 1 Live *Lucilia sericata* larvae leaking from the patient's nostrils (left side) and extracted from the airways during a flexible bronchoscopy (right side)

infestation of the respiratory tract is unclear. While myiasis due to *L. sericata* is usually known to be a benign affection, without tissue invasion, infestation involving the bronchial tree may lead to a life-threatening event, particularly in intubated patients.

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